MANUFACTURING NUMBERS:

9100429

Antunes Foodservice Equipment

DIVISION OF A.J. ANTUNES & CO. · ISO 9001 CERTIFIED

A BRAND OF A.J. ANTUNES & CO.

roundup

ANTUNES FOODSERVICE EQUIPMENT

MIRACLE STEAMER

Models MS-150

P/N 1010881 06/04

Owner's Manual

TABLE OF CONTENTS

Owner information 2
General 2
Warranty Information 2
Service/Technical Assistance 3
Important safety information 3
Electrical Ratings 5
Specifications 5
Electrical Cord & Plug Configurations 5
Model Designation 5
Dimensions 6
Installation 7
Unpacking 7
Equipment Setup 7
Model MS-150 8
General 9
Operation 9
Programming 9
Maintenance 12
Daily 12
Monthly 12
Technical Theory of Operation 15
Troubleshooting 16
Replacement parts 18
Wiring diagrams 21
NOTES 22
LIMITED WARRANTY ..... Back Cover

OWNER INFORMATION

General

The Miracle Steamer produces steam using plain tap water for quick heating and reconstituting of food items. Simple push button action delivers a fully adjustable impulse of steam. Because the amount of steam is consistent, it removes the guesswork and produces a uniform finished product from one operator to the next.

This manual provides the safety, installation and operating procedures for the Miracle Steamer. We recommend that all information contained in this manual be read prior to installing and operating the unit.

Your Miracle Steamer is manufactured from the finest materials available and is assembled to Roundup's strict quality standards. This unit has been tested at the factory to ensure dependable trouble-free operation.

Warranty Information

Please read the full text of the Limited Warranty in this manual.

If the unit arrives damaged, contact the carrier immediately and file a damage claim with them. Save all packing materials when filing a claim. Freight damage claims are the responsibility of the purchaser and **are not** covered under warranty.

The warranty **does not extend to:**

- Damages caused in shipment or damage as result of improper use.
- Installation of electrical service.
- Normal maintenance as outlined in this manual.
- Malfunction resulting from improper maintenance.
- Damage caused by abuse or careless handling.
- Moisture damage to electrical components.
- Damage from tampering with, removal of, or changing any preset control or safety device.

IMPORTANT

A.J. Antunes & Co. reserves the right to change specifications and product design without notice. Such revisions do not entitle the buyer to corresponding changes, improvements, additions or replacements for previously purchased equipment.

IMPORTANT! Keep these instructions for future reference. If the unit changes ownership, be sure this manual accompanies the equipment.

Service/Technical Assistance

If you experience any problems with the installation or operation of your unit, contact your local Roundup Authorized Service Agency. They can be found in the service agency directory packaged with the equipment.

Fill in the information below and have it handy when calling your authorized service agency for assistance. The serial number is on the specification plate located on the rear of the unit.

Purchased From: _____

Date of Purchase: _____

Model No.: _____

Serial No.: _____

Mfg. No.: _____

Refer to the service agency directory and fill in the information below:

Authorized Service Agency

Name: _____

Phone No.: _____

Address: _____

Use only genuine Roundup replacement parts in this unit. Use of replacement parts other than those supplied by the manufacturer will void the warranty. Your Authorized Service Agency has been factory trained and has a complete supply of parts for this unit.

You may also contact the factory at **1-877-392-7854** or **1-630-784-1000** if you have trouble locating your local authorized service agency.

IMPORTANT SAFETY INFORMATION

Throughout this manual, you will find the following safety words and symbols that signify important safety issues with regards to operating or maintaining the Miracle Steamer.

⚠ WARNING ⚠

GENERAL WARNING. Indicates information important to the proper operation of the equipment. Failure to observe may result in damage to the equipment and/or severe bodily injury or death.

⚠ WARNING ⚠

ELECTRICAL WARNING. Indicates information relating to possible shock hazard. Failure to observe may result in damage to the equipment and/or severe bodily injury or death.

⚠ CAUTION ⚠

GENERAL CAUTION. Indicates information important to the proper operation of the equipment. Failure to observe may result in damage to the equipment.

WARNING

HOT SURFACE WARNING. Indicates information important to the handling of equipment and parts. Failure to observe caution could result in personal injury.

IMPORTANT SAFETY INFORMATION (continued)

In addition to the warnings and cautions in this manual, use the following guidelines for safe operation of the unit.

- Read all instructions before using equipment.
- For your safety, the equipment is furnished with a properly grounded cord connector. Do not attempt to defeat the grounded connector.
- Install or locate the equipment only for its intended use as described in this manual. Do not use corrosive chemicals in this equipment.
- Do not operate this equipment if it has a damaged cord or plug, if it is not working properly, or if it has been damaged or dropped.
- This equipment should be serviced by qualified personnel only. Contact the nearest Roundup authorized service facility for adjustment or repair.
- Do not block or cover any openings on the unit.
- Do not immerse cord or plug in water.
- Keep cord away from heated surfaces.
- Do not allow cord to hang over edge of table or counter.

The following warnings and cautions appear throughout this manual and should be carefully observed.

- **Turn the unit off, disconnect the power source and allow unit to cool down before performing any service or maintenance on the unit.**
- **The equipment should be grounded according to local electrical codes to prevent the possibility of electrical shock. It requires a grounded receptacle with separate electrical lines, protected by fuses or circuit breaker of the proper rating.**
- **All electrical connections must be in accordance with local electrical codes and any other applicable codes.**
- **WARNING ELECTRICAL SHOCK HAZARD. FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN SERIOUS INJURY OR DEATH.**
  - **Electrical ground is required on this appliance.**
  - **Do not modify the power supply cord plug. If it does not fit the outlet, have a proper outlet installed by a qualified electrician.**
  - **Do not use an extension cord with this appliance.**
  - **Check with a qualified electrician if you are in doubt as to whether the appliance is properly grounded.**
- **This equipment is to be installed to comply with the basic plumbing code of the Building Officials and Code Administrators, Inc. (BOCA) and the Food Service Sanitation Manual of the Food and Drug Administration (FDA).**
- **If the supply cord is damaged, it must be replaced by the manufacturer or its service agent, or a similarly qualified person.**
- **Do not clean this appliance with a water jet.**
- **Do not use a sanitizing solution or abrasive materials. The use of these may cause damage to the stainless steel finish.**
- **To ensure proper steaming characteristics, some calcium/mineral deposits must be present on the generator surface. If, during cleaning, the surface does become free of calcium/mineral deposits, one approved method is to add <u>plain tap water</u> to the surface and allow it to boil off. This will ensure proper steaming characteristics by creating a thin layer of deposits on the surface.**
- **Chlorides or phosphates in cleansing agents (such as bleach, sanitizers, degreasers or detergents) could cause permanent damage to stainless steel equipment. The damage is usually in the form of discoloration, dulling of metal surface finish, pits, voids, holes or cracks. This damage is permanent and not covered by warranty.**
- **The following tips are recommended for maintenance of your stainless steel equipment,**
  - **Always use a soft, damp cloth for cleaning, rinse with clear water and wipe dry. When required, always rub in direction of metal polish lines.**
  - **Routine cleaning should be done daily using soap, ammonia detergent and water.**
  - **Stains and spots should be sponged using a vinegar solution as required.**
  - **Finger marks and smears should be rubbed off using soap and water.**
  - **Hard water spots should be sponged using a vinegar solution.**

SPECIFICATIONS

Electrical Ratings

Model and Mfg. Number	Voltage	Watts	Amps	Hertz
MS-150HC 9100429	230	3300	14.4	50/60

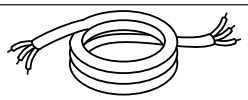
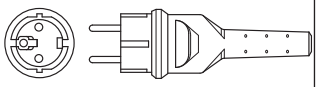
⚠ CAUTION ⚠

All electrical connections must be in accordance with local electrical codes and any other applicable codes.

⚠ CAUTION ⚠

Be sure to follow all safeguards and precautions in the Important Safety Instructions section of this manual.

Electrical Cord & Plug Configurations

Letter Code*	Description	Configuration
C H	Commercial Cord Harmonized Cord	
(H)C**	CEE 7/7, 16 Amp., 250 VAC (Assembly Only).	

**** Used in Model Designation***

***** Indicates that the plug comes with a Harmonized Cord***

Model Designation

MS-150XX

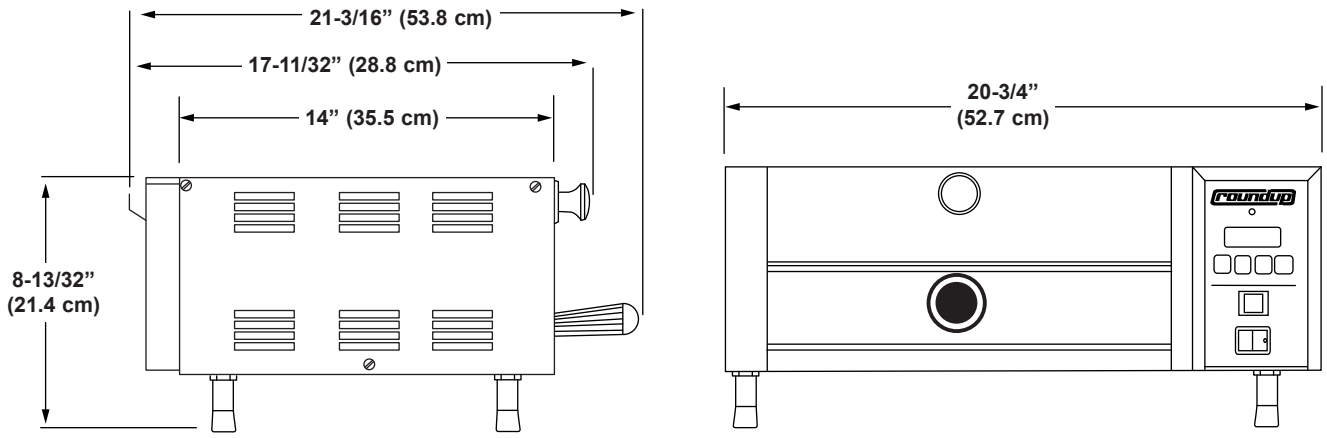
TYPE OF POWER CORD
H = HARMONIZED
C = COMMERCIAL

TYPE OF PLUG
C = CEE 7/7 Schuko

SPECIFICATIONS (continued)

Dimensions

MS-150



INSTALLATION

Unpacking

1. Remove unit and all packing materials from shipping carton.
2. The unit should come with the items listed below:
   - Owner's Manual
   - Authorized Service Agency Directory
   - Spatula Assembly

NOTE: If any parts are missing or damaged, contact Antunes Technical Service IMMEDIATELY at 1-877-392-7854 or 1-630-784-1000.

3. Remove all packing materials and protective coverings from the unit.
4. Remove and wash all removable parts in soap and water. Rinse with clean hot water and allow to air dry.
5. Wipe all surfaces of the unit with a hot, damp cloth.

NOTE: Do not use a dripping wet cloth. Wring out before use.

6. Assemble the Handle, Handle Guard and Mounting Bolt to the Spatula as shown in Figure 1.
7. Re-install all removed parts.

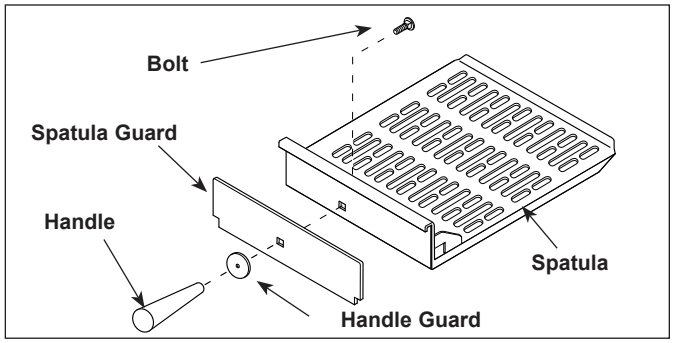


Figure 1. Assembling Handle

Equipment Setup

GENERAL

When placing the unit into service, pay attention to the following guidelines:

- Make sure power to the unit is off and the unit is at room temperature.
- Do not block or cover any openings on the unit.
- Do not immerse cord or plug in water.
- Keep cord away from heated surfaces.
- Do not allow cord to hang over edge of table or counter.

ELECTRICAL

1. Place the unit on a sturdy, level table or other work surface. Turn the Rocker Switch (power On/Off) to OFF before proceeding.
2. Ensure that the line voltage corresponds to the stated voltage on the units specification label and power cord warning tag. **If you are unsure of your Line Voltage, contact your electrician.**
3. Connect the unit to the power supply.

WARNING THIS APPLIANCE MUST BE EARTHED (GROUNDED)		WARNING THIS APPLIANCE MUST BE EARTHED (GROUNDED)
220-240 VAC ONLY		THIS UNIT IS DESIGNED TO OPERATE **ON 220-240 VOLTS ONLY**. APPLICATION WITH ANY OTHER VOLTAGE SUPPLY COMPLETELY **VOIDS ALL WARRANTY**. PLEASE CHECK YOUR LINE VOLTAGE BEFORE INSERTING THIS PLUG INTO THE RECEPTACLE.

INSTALLATION (continued)

⚠ CAUTION ⚠

Be sure to follow all safeguards and precautions in the Important Safety Instructions section of this manual.

⚠ CAUTION ⚠

All electrical connections must be in accordance with local electrical codes and any other applicable codes.

PLUMBING

NOTE: Miracle Steamer models are designed to use cold tap water. Distilled water may be used to reduce calcium/mineral deposit build-up and reduce maintenance costs.

⚠ CAUTION ⚠

This equipment is to be installed to comply with the basic plumbing code of the Building Officials and Code Administrators, Inc. (BOCA) and the Food Service Sanitation Manual of the Food and Drug Administration (FDA).

Model MS-150

The MS-150 has a self-contained water tank. To fill the self-contained water tank:

1. Open the sliding tank cover on top of the unit (Figure 2).

NOTE: Make sure filter inside tank is installed properly.

2. Pour in **cold tap water**. The tank will hold approximately 3 quarts (2.81 liters).
3. Close the sliding tank drawer.

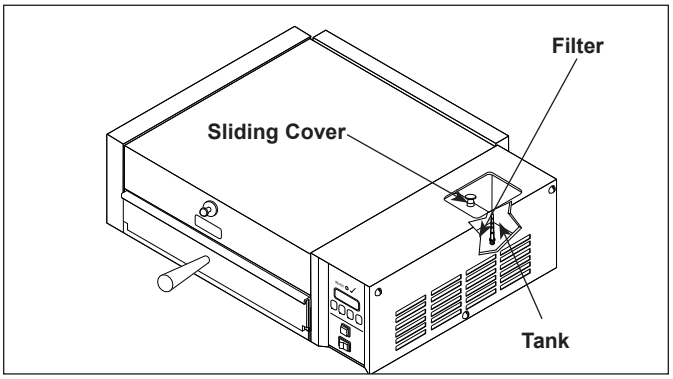


Figure 2. Filling Water Tank

OPERATION

General

When the Operate button (Figure 3) is pressed, power is supplied to the water pump. The pump operates and water sprays onto the heated Steam Generator. The water flashes immediately into live steam and shoots down onto the product.

One of two operational modes can be used:
Single Shot or **Timed Cycle**

SINGLE SHOT

The Operate button is pressed to initiate a single steam shot. The control board applies power to the water pump/solenoid and a "shot" of steam occurs.

TIMED CYCLE

The control is used to set the desired cook time (up to 99 minutes, 59 seconds). When the Start/Stop button is pressed, the Control Board applies power to the water pump/solenoid at regular intervals for the duration of the displayed cycle time. The display counts down to zero and, when the cycle is complete, sounds an audible signal, and then reverts back to the original programmed cycle time. The unit is then ready for the next cycle.

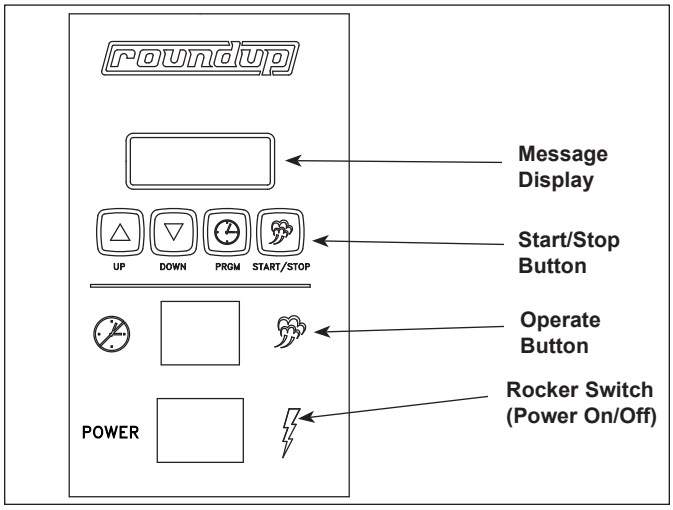


Figure 3. Operating Controls

IMPORTANT: 220/240V Miracle Steamers are factory programmed for the following recommended settings:

- **Total Cycle Time (CYC)** = 15 min., 00 secs. (Range: 1 seconds to 99 minutes 59 seconds)
- **Shot Interval Time (SHO)** = 00 min., 20 secs. (Range: 1 seconds to 5 minutes 59 seconds)
- **Steam Shot Time (H_2O)** = (0.80) or 0.80 second (range: 0.01 to 2.50 seconds)

This converts approximately 1/4 oz. (7.5 milliliters) of water to steam every 20 seconds for a 15 minute cooking cycle. To change any of these settings see ***PROGRAMMING*** on this page.

Operating Instructions

1. Turn the Rocker Switch (power On/Off) to ON (Figure 3).
2. Allow the unit to preheat for approximately 20-30 minutes.

NOTE: Do not push any of the buttons during warm-up time or when the display flashes "LOW." This indicates that the unit is NOT up to operating temperature.

3. Pull out the Spatula or Drawer Assembly and place the product to be steamed onto the Spatula.
4. Push the Spatula or Drawer Assembly fully into the steamer.
5. **Single Shot:** Press and release the Operate button, wait 20 seconds for the steam to penetrate the product.
   Timed Cycle: Press the Start/Stop button to begin the steaming cycle. The display will count down to zero and an audio signal will sound at the end of the steaming cycle.
6. Remove steamed product.

Programming

CYC (Total Cycle Time) refers to the total amount of cooking time set for the product.

RATE (Shot Interval Time) is the time set between shots of steam during a complete cycle.

SHOT setting (Steam Shot Time) is used to adjust the water volume used during each pump/solenoid operation.

OPERATION (continued)

⚠ WARNING ⚠

To avoid injury, use care when pulling spatula or Drawer out from unit. Allow steam to escape before putting hands or face over the steamer.

The amount of steam produced by your Miracle Steamer depends on the amount of water sprayed onto the steam generator.

Flooding of the generator may occur if the SHOT setting is set too high. To prevent this from occurring, the Shot Interval Time (RATE) may be increased to allow more time for generator heat recovery. Adjustments should be made to both values to determine the optimum settings for your cooking needs.

To program the control, refer to Figure 4 and use the following procedure in sequence:

1. Turn the Rocker Switch (power On/Off) to ON. The display will show the factory programmed Total Cycle Time in minutes and seconds (Item A, Figure 4).
2. Press and release the Program button to change the control from OPERATION to PROGRAM mode.

NOTE: CYC, RATE, and SHOT are only displayed momentarily during the programming sequence when the Program button is pressed.

NOTE: If no change is made within 10 seconds at any time during the programming process, all changes made up to that point are automatically stored in memory and the control reverts to OPERATION mode.

3. To change the Total Cycle Time in minutes, use the UP or DOWN arrow buttons to change the time (Item B, Figure 4).
4. Press and release the Program button again, and use the UP or DOWN arrow buttons to change the Total Cycle Time in seconds (Item C, Figure 4).
5. To change the RATE factory settings, make sure the control is in PROGRAM mode and displaying CYC time, then press and hold the two arrow buttons simultaneously for 1-2 seconds. RATE will be displayed (Item D, Figure 4).
6. While pressing the Program button, use the UP or DOWN arrow buttons to change the RATE (Shot Interval Time) in seconds (Item E, Figure 4).
7. Press and release the Program button again and use the UP or DOWN arrow buttons to change the RATE (Shot Interval Time) in minutes (Item F, Figure 4).
8. Press and release the Program button again and SHOT will be displayed. When the Program button is pressed again, the unit displays the shot time in 0.01 second increments (Item H, Figure 4).
9. To change the SHOT (Steam Shot time), press and release the Program button again to display the setting (Item G, Figure 4). Use the UP or DOWN arrow buttons to increase or decrease the time.

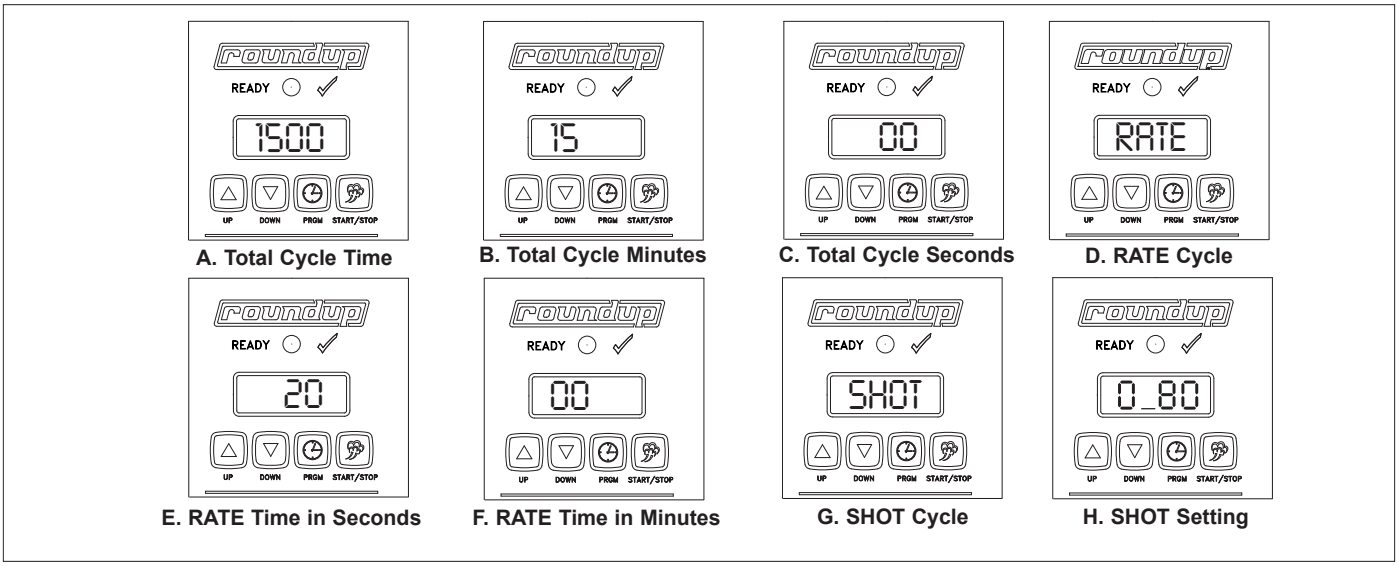


Figure 4. Control Programming Sequence

OPERATION (continued)

10. Press either the Start/Stop, Single Shot, or Operate buttons to store the changes, exit the PROGRAM Mode and initiate the cooking cycle.

NOTE: The Start/Stop, Single Shot, or Operate buttons may be pressed at any time during programming to store the changes and exit the PROGRAM Mode.

NOTE: If no change is made within 10 seconds at any time during the programming process, all changes made up to that point are stored in memory and the control reverts to the OPERATION Mode.

PROGRAMMING / DISPLAYING GENERATOR TEMPERATURE

The unit has three generator temperature options.

- Display of current generator casting temperature
- Changing of generator set point temperature
- Changing temperature units from °F (Fahrenheit) to °C (Celsius) and vice versa.

To verify the actual generator temperature, press and hold the UP arrow button. The unit will display the actual generator temperature. (Figure 5)

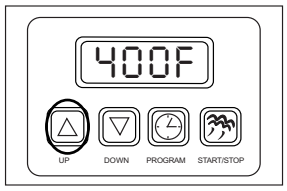
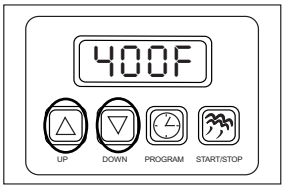


Figure 5.

To verify or change the generator setpoint temperature, press and hold the UP and DOWN arrow buttons simultaneously for three seconds. Then, raise or lower the temperature by depressing the UP or DOWN arrow buttons. Release the buttons when the desired temperature is reached. After 10 seconds, the display will return to 15:00 (Figure 6).

Figure 6.

To Change the display from Fahrenheit (F) to Celsius (C), press and hold the UP arrow and the PROGRAM buttons simultaneously for three seconds. Repeat the process to reverse from Celsius to Farenheit (Figures 7A and 7B).



(Figure 7A).

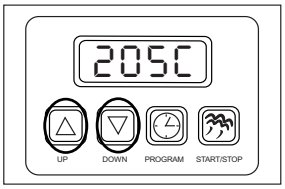


Figure 7B.

MAINTENANCE

⚠WARNING ⚠

Turn the unit off, disconnect the power source and allow the unit to cool down before performing any service or maintenance on the unit.

⚠ CAUTION ⚠

Chlorides or phosphates in cleansing agents (such as bleach, sanitizers, degreasers or detergents) could cause permanent damage to stainless steel equipment. The damage is usually in the form of discoloration, dulling of metal surface finish, pits, voids, holes or cracks. This damage is permanent and not covered by warranty. The following tips are recommended for maintenance of your stainless steel equipment:

- **Always use a soft, damp cloth for cleaning, rinse with clear water and wipe dry. When required, always rub in direction of metal polish lines.**
- **Routine cleaning should be done daily using soap, ammonia detergent and water.**
- **Stains and spots should be sponged using a vinegar solution.**
- **Finger marks and smears should be rubbed off using soap and water.**
- **Hard water spots should be sponged using a vinegar solution.**

NOTE: Frequency of cleaning is determined by water conditions, usage and water filtration systems.

⚠ CAUTION ⚠

Do not use a sanitizing solution or abrasive materials. The use of these may cause damage to the stainless steel finish.

⚠ CAUTION ⚠

If a chemical cleaner is used, be sure it is safe to use on cast aluminum. Observe all precautions and warnings on product label.

⚠ CAUTION ⚠

Unplug power cord before moving and servicing this appliance.

Daily

1. Turn the Rocker Switch (power On/Off) to OFF. Unplug the power cord and allow the unit to cool down before proceeding.
2. Remove the Spatula, Liner, Drip Pan, Top Cover, and Steam Vent (Figure 9).
3. Wash items in hot, soapy water and then rinse and **WIPE DRY**.
4. Wipe down the food compartment and the entire exterior of the unit (Figure 9) with a clean, hot, damp cloth (not dripping wet) and wipe dry.
5. Reinstall the Steam Vent first, followed by the remaining items.

NOTE: Install steam vent before installing liner and drawer/spatula.

NOTE: Failure to properly clean and dry the above mentioned items prior to reassembly may result in the accumulation of water/moisture overnight. This may lead to permanent damage of the equipment's finish and its accessories. This damage is not covered by warranty.

Monthly

The Miracle Steamer utilizes an open steam generator. Water sprayed onto the generator surface flashes into steam immediately, but the minerals in the water do not steam, they stay on the generator surface. **A small amount of calcium/mineral deposits are needed for proper operation**, but a build-up of excessive calcium/mineral deposits causes poor steaming efficiency, excessive moisture (wet steam) and will eventually severely retard the steaming action completely.

CLEANING STEAM GENERATOR

1. Turn the unit off and unplug the power cord. Allow the unit to cool down before proceeding.
2. Perform the Daily cleaning, but **DO NOT** reassemble the unit
3. Remove the wing nut, Generator Cover, and Diffuser (Figure 9). Wash these items in hot, soapy water, rinse and **WIPE DRY**.

MAINTENANCE (continued)

4. With the unit cool, use a wire brush and/or scraper to loosen and remove the excessive calcium/mineral deposits from the generator surface (Figure 8). Next, take a wire brush and clean out any build up that has accumulated in the 28 steam ports (26 vertical and 2 horizontal) of the generator (Figure 8). Remove the loose build up, wipe the generator with a clean, damp cloth, and reassemble the unit.

NOTE: If deposits are still excessive and/or difficult to remove, refer to Steps 5 and 10.

5. Pour delimer solution (not supplied) onto the generator surface. Follow the delimer manufacturer's instructions for proper mixture and use.

6. Using a sponge or a dry towel, remove the delimer solution from the generator surface, then rinse with clean water.

NOTE: To ensure proper steaming characteristics, some calcium/mineral deposits must be present on the generator surface. If, during cleaning, the surface does become free of calcium/mineral deposits, add plain tap water to the surface and allow it to boil off. If necessary, repeat this process to formulate a thin coating of calcium/mineral deposits.

⚠ CAUTION ⚠
If a chemical cleaner/delimer is used, be sure it is safe to use on cast aluminum. Observe all precautions and warnings on the product label.

NOTE: In soft water areas, it may be necessary to add a small amount of lime to the generator to "season" it. This will ensure proper steaming characteristics by producing a thin coating of calcium/mineral deposits on the generator surface.

Seasoning mixture consists of 3/4 ounces (25ml/25cc) baking soda, 3/4 ounces (25ml/25cc) lime mixed with 1 quart (950ml/950cc) of water. Stir mixture and pour 1/4" deep onto the hot generator surface. After mixture is converted to steam, the remaining loose power can be removed.

7. Plug the power cord into the appropriate outlet.

8. Turn the Rocker Switch (power On/Off) to ON. Allow the unit to warm up for approximately 30 minutes.

9. Push and release the Operate button or the Single Shot button several times to operate the steamer. **This purges any remaining delimer residue from the generator surface.**

10. Turn the unit off, reinstall all parts and accessories, and return the unit to service.

MS-150 WATER TANK FILTER

The Water Tank Filter is used to prevent solids or food products from entering and damaging the water pump. The unit uses a water filter (Figure 9). Inspect and clean this filter monthly or more regularly using the following procedure:

NOTE: The water level should be very low or near empty.

1. Turn the Rocker Switch (power On/Off) to OFF. Unplug the power cord and allow the unit to cool down before proceeding.

2. Open the Slide Door (Figure 9).

3. Remove the filter, located inside the tank, by pulling it upwards and out of the bottom hole.

4. Clean the Filter by running it under tap water. Replace the Filter if the screen is torn or damaged.

5. Reinstall the filter stem into the bottom hole of the tank (Figure 9).

6. Fill the Water Tank and test the unit.

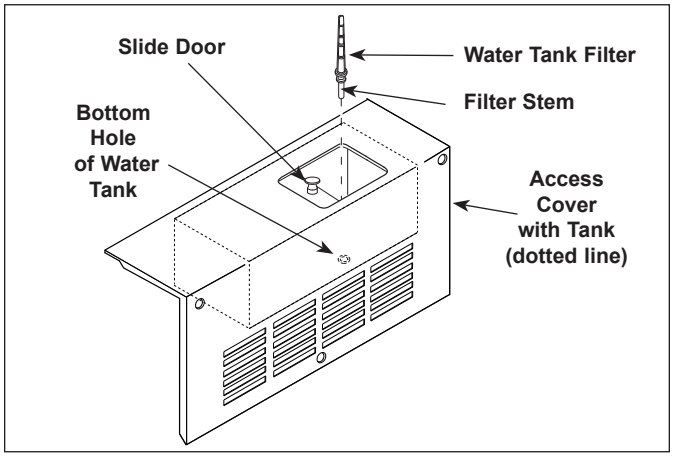


Figure 8. Water Tank Filter

MAINTENANCE (continued)

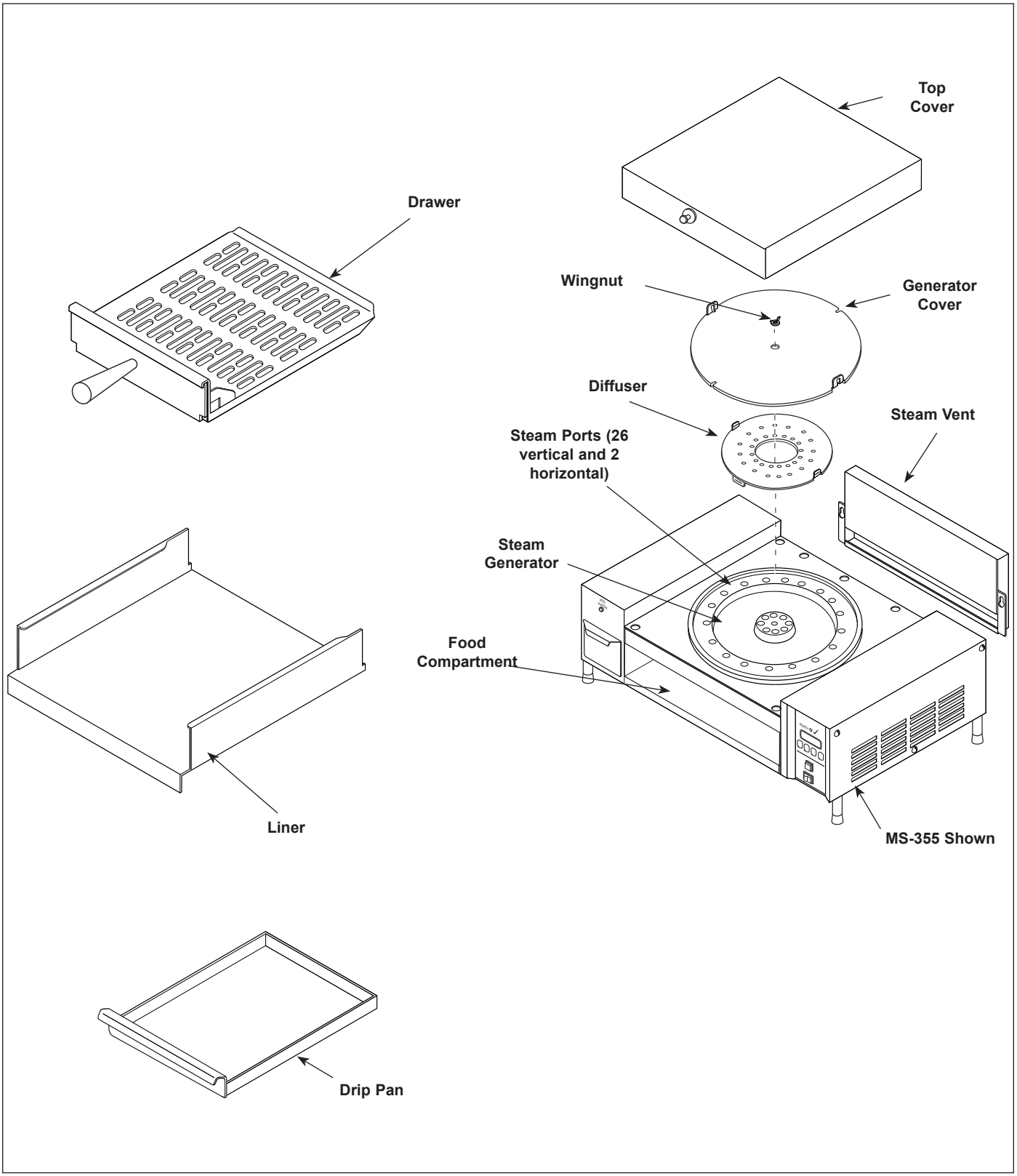


Figure 9. Miracle Steamer Components

MAINTENANCE (continued)

Technical Theory of Operation

When the Rocker Switch (power On/Off) is ON, line voltage flows to the primary side of the step down transformer. The transformer's secondary side supplies 12 and 24 VAC to the Control Board.

Once powered, and provided that the Generator temperature is below 380° F (193° C), the Control Board calls for heat by supplying 10 - 15 VDC to the Solid State Relay terminals 3(+) 4(-). Once powered, the Solid State Relay closes terminals 1 and 2 which allows line voltage to flow to the Generator.

As the Generator begins to heat up, a type "K" thermocouple monitors the internal Generator temperature. As the heat continues to increase, so does the thermocouple's DC millivolts. Once the Generator's temperature rises to 380-420° F (193 - 215° C), the thermocouple is generating approximately 7.5 - 9.0 DC millivolts.

The Control Board receives these millivolts and proceeds to remove the 10 - 15 VDC to the Solid State Relay since the heating circuit has now become satisfied. Then, relay terminals 1 and 2 open, and the Generator stops heating.

When the Operate, Single Shot, or Start/Stop button is pressed, the Control Board is signaled to supply 24 VAC to the water pump for a split second.

The solenoid valve opens, or the water pump runs, and allows a shot of water (approximately 25ml or 3/4 oz.) to flow onto the generator surface for steaming.

NOTE: If the display is in a Timed Cycle (counting down), the Control Board will continue to activate the solenoid valve or water pump for repeated shots of water, once every 20 seconds, and for the duration of the cycle time displayed. See the Programming section of this manual for more information.

Since the Generator Cover is secured in place with a wing nut, the steam is forced downward through the Generator Steam Ports and onto the product. The Control Board's parameters can be custom programmed for the over all cycle steam time (CYC), as well as the interval time in seconds (SHO) when each shot of water occurs, and also the water volume (H2O) used per each shot of water. This Control Board also incorporates several diagnostic LEDs. See the Operating and Programing sections of this manual).

An audio signal will sound for 3 seconds at the end of a Time Cycle. If the heating circuit continues to call for heat and the Generator overheats, a manual, resetable Hi-Limit Thermostat will trip and open the generator circuit.

TROUBLESHOOTING

⚠ WARNING ⚠

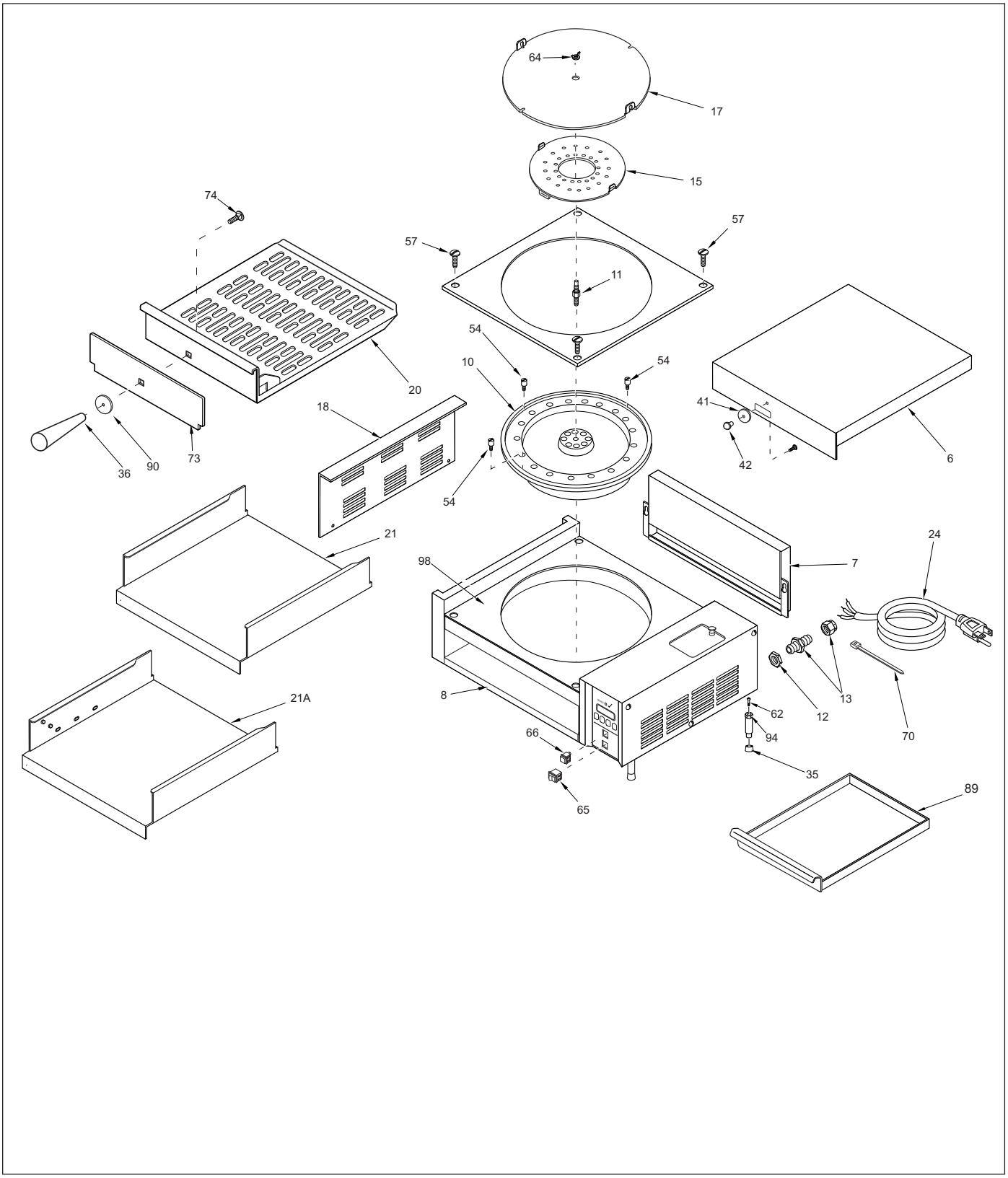
To avoid possible personal injury and/or damage to the unit, inspection, test and repair of electrical equipment should be performed by qualified service personnel. The unit should be unplugged when servicing, except when electrical tests are required.

Problem	Possible Cause	Corrective Action
Control Display is Blank (power On/ Off switch is On but indicator light is off).	The power cord is not correctly plugged in.	Plug the power cord into the appropriate outlet.
	The power cord and/or electrical plug is damaged.	Inspect electrical wire, plug, and receptacle.
	The main electrical panel circuit breaker is off or has been tripped.	Reset circuit breaker. Contact your maintenance person or Authorized Service Agency if it trips again.
	Switch is inoperable.	Contact your maintenance person or Authorized Service Agency for service.
Control Display is blank (power On/ Off switch is on and indicator light is on).	Control Board is inoperable	Contact your maintenance person or Authorized Service Agency for service.
	Transformer is inoperable.	
	Loose, burnt, or broken wires in circuit.	
Unit does not heat up (Control Display is on)	Hi-Limit Thermostat is tripped or inoperable.	Reset the Hi-Limit Thermostat according to the Operations section of this manual. If the Hi-Limit Thermostat requires continuous resetting, contact your Authorized Service Agency for service.
	Solid State Relay is inoperable.	
	Thermocouple is inoperable.	
	Control Board is inoperable.	
	Steam Generator is inoperable.	
	Loose, burnt, or broken wires in circuit.	
The unit's main electrical panel circuit breaker trips.	Damaged receptacle, plug, or cord; a loose connection or an internal component failure.	Turn the unit off, allow it to cool to room temperature, and then restart the unit. Contact your maintenance person or Authorized Service Agency if the condition repeats.
Water leaking inside electrical housing.	Pinhole leak in rubber hoses	Replace hoses.
	Loose or damaged water line tubes and/or fittings inside electrical housing.	Tighten or replace tubes and/or fittings.
"**ERR**" appears in the Control Display.	Programming and/or SHO and H2O values were adjusted/changed improperly.	Reset the Control Board as described in the Programing section of this manual. See Fault Codes.

TROUBLESHOOTING (continued)

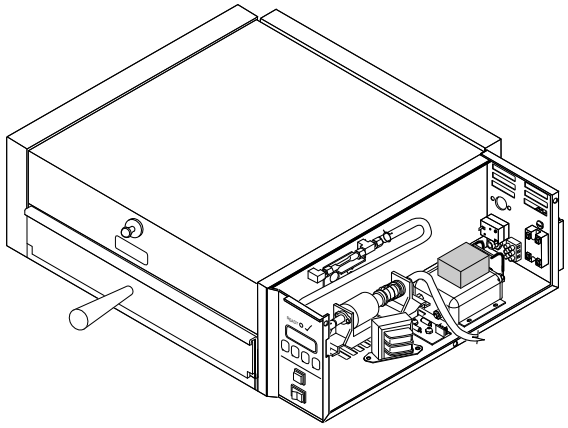
Problem	Possible Cause	Corrective Action
Unit heats but there is little or no steam produced and/or The product requires more steaming than usual.	Filter Strainer is restricted.	Check and clean the Filter Strainer as described in the Maintenance section of this manual.
	Unit is not being cleaned properly (daily/monthly).	Clean unit daily and monthly as described in the Maintenance section of this manual.
	Programming and/or SHO, H2O values were adjusted/changed improperly.	Reprogram the SHO and H2O values as described in the Programming section of this manual.
	Insufficient or excessive calcium/ mineral deposits on the Generator surface.	Verify that thin layer of calcium/mineral deposits is present on the Generator surface. Refer to the Maintenance section of this manual.
	Generator surface is bare.	Generator surface must have a thin calcium/ mineral coating for proper steaming. Refer to the Maintenance section of this manual.
	Generator Steam Ports are restricted.	Clean the Steam Ports as described in the Maintenance section of this manual.
	Generator Cover is warped or loose.	Verify that the Generator Cover wingnut is tight. If noticeable steam escapes around the Generator Cover, replace the cover.
	Generator Diffuser is missing.	Install Generator Diffuser or replace if missing.
	Generator surface temperature is too low.	Verify Generator surface temperature to be 380-420° F (193 - 215° C).
Excessive condensation in Food Compartment.	Programming and or SHO and H2O values were adjusted improperly.	Reprogram the SHO and H2O values as described in the Programming section of this manual.
Steam coming out around top covers or sides.	Generator Cover's wingnut is loose.	Tighten wingnut.
	Generator Cover is warped.	Replace Generator Cover.

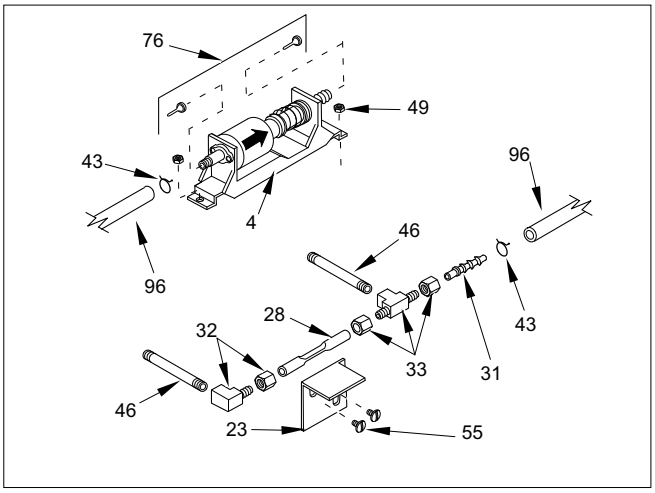
REPLACEMENT PARTS

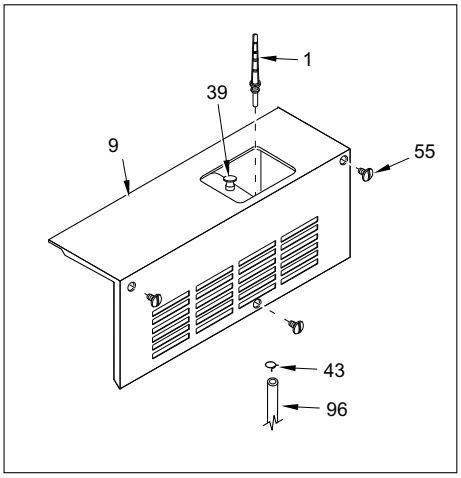


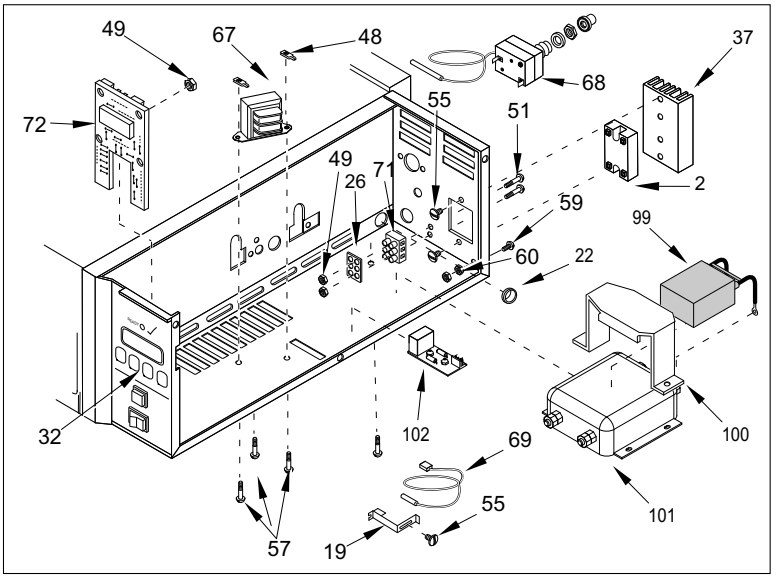
REPLACEMENT PARTS (continued)

MS-150 Service Compartment









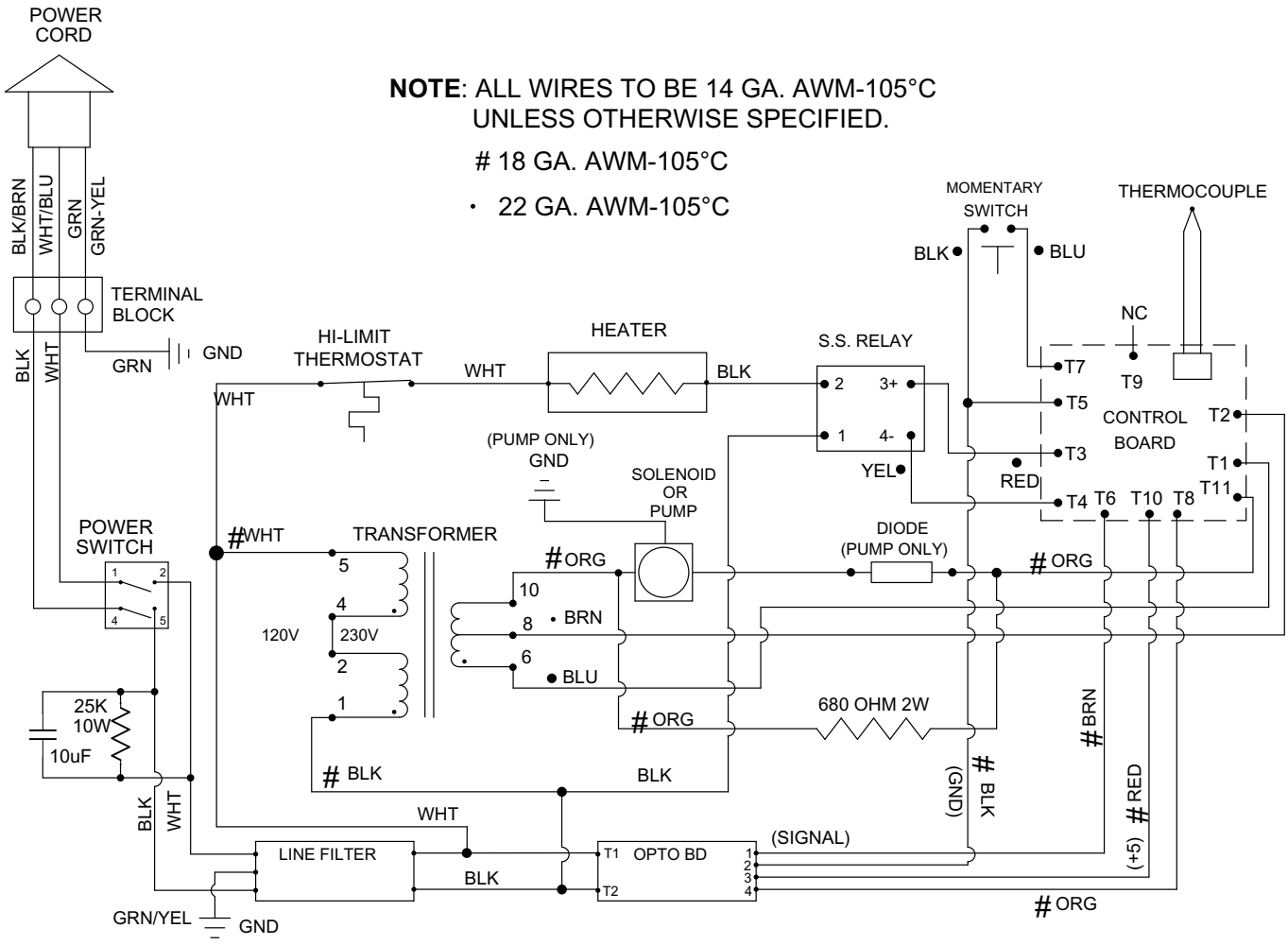
REPLACEMENT PARTS (continued)

MS-150

Item	Part No.	Description	Qty.
1	0010159	Filter Assy., Water Tank (MS-150/155)	1
2	7000370	Relay	1
4	0011802	Pump/Tube Assy., 24VAC	1
6	7000237	Top Cover Assy. (Includes #41 & #42)	1
7	0011314	Steam Vent Assy.	1
8	0021131	Floor/Chassis Weldment	1
9	0021179	Access Cover Weldment	1
10	7000246	Generator, 230V	1
	7000245	Generator, 208V	1
11	0300129	Stud, Cover Hold Down	1
12	040P138*	Locknut, 1/2”	1
13	040K251	Strain Relief (includes #12)	1
14	05P2199*	Spacer	2
15	0503431	Diffuser, Steam	1
17	0503433	Cover, Generator	1
18	0503434	Cover, End Housing	1
19	0503435	Retainer, Thermocouple	1
20	0503867	Spatula MS-150	1
21	0503440	Liner, Cavity	1
21A	0504081	Liner Cavity	1
23	0503472	Bracket, Hi-Limit Support	1
24	0700452	Power Cord, NEMA 6-20P	1
	0700453	Power Cord, CEE 7/7	1
	0700463	Power Cord, Nema 5-15P	1
26	100P967	Label, Marking	1
27	1001036	Label, Control Panel	1
28	2000203	Tube, Restrictor, 1/4”	1
31	2040106	Adapter, Tube/Hose (MS-150)	1
32	2040145	Elbow, Female, 1/8” x 1/4”	1
33	2040146	Tee, Female, 1/8” x 1/4”	1
35	210K108	Foot, Rubber (4 Pack)	1
36	2100119	Handle, Spatula (MS-150)	1
37	4050180	Heat Sink	1
39	2100170	Knob, Chrome (MS-150)	1
41	2100249	Guard, Knob	1
42	2100273	Knob	1
43	2110101	Clamp, Hose, 3/8 (MS-150)	1
44	2110103	Clamp, Hose, 1/2” (MS-150)	1
46	2190111	Generator Tube, Teflon, 3-5/8” (MS-150)	2
48	300P102*	Nut, Speed, “U”, #8-32	2
49	304P105*	Nut, Hex, KEPS, #4-40, Zinc	4
50	306P101*	Nut, Hex, #6-32	2
51	306P105*	Screw, Machine, #6-32 x 1/2”	2
52	306P123*	Screw, Machine, #6-32 x 7/8”	2
53	306P130*	Nut, Hex, KEPS, #6-32	2
54	306P134*	Screw, Machine, #6-32 x 3/8	3
55	308P103*	Screw, Machine, #8-32 x 1/4”	6
57	308P105*	Screw, Machine, #8-32 x 1/2”	4
58	308P120*	Screw, Machine, #8-32 x 5/8” (sltrshd)	4
59	308P124*	Screw, Machine, #8-32 x 1/2” (one-way)	1
60	308P143*	Nut, Hex, KEPS, #8-32	2
61	310P136*	Screw, Machine, #10-32 x 1-1/4” (splanhd)	4
62	310P149*	Screw, Machine, #10-32 x 7/8”	2
63	310P149*	Screw, Machine, #10-32 x 7/8” (MS-150)	2
64	325P170*	Nut, Wing, 1/4-20	1
65	4010137	Rocker Switch, Power On/Off 250V	1
	4010151	Rocker Switch, Power On/Off 120V	1
66	4010166	Switch, Momentary (GREEN)	1
67	7000319	Transformer, 115-230/24V	1
68	7000135	Thermostat, Hi-Limit	1
69	4050214	Thermocouple, Type-K	1
70	406P107	Cable Tie	3
71	7000136	Terminal Block, 3-Pole	1
72	4070078	Control Board, Temperature/Timer, 24V, 50/60 Hz	1
73	2100279	Guard, Spatula (MS-150)	1
74	338P102*	Bolt, Handle Mounting (MS-150)	1
76	7000170	Water Pump Check Valve Kit	1
89	0503536	Drip Pan	1
91	***See page 29 for Strainer Parts Identification.***		
94	0011370	2” Leg Kit (Incl. #35)	4
96	7000134	Silicon Tube Kit, Water Pump (MS-150)	1
97	7000138	Quick Disconnect Female Kit	1
98	0503429	Support, Generator Upper.	1
99	00203-0091	Assy. Sub, MSFilter	1
100	0504248	Bracket - Capacitor	1
101	4050229	Line Filter	1
102	4070069	A/C Line Isolator Board	1
103	4060374	Ground Lug, Copper	1

**** Only available in quantities of 10.***

WIRING DIAGRAMS



NOTES

NOTES

LIMITED WARRANTY

Equipment manufactured by Roundup Food Equipment Division of A.J. Antunes & Co. has been constructed of the finest materials available and manufactured to high quality standards. These units are warranted to be free from mechanical and electrical defects for a period of one year from date of purchase or 18 months from shipment from factory, whichever occurs first, under normal use and service, and when installed in accordance with manufacturer's recommendations. To insure continued proper operation of the units, follow the maintenance procedure outlined in the Owner's Manual.

1. This warranty does not cover cost of installation, defects caused by improper storage or handling prior to placing of the Equipment. This warranty does not include overtime charges or work done by unauthorized service agencies or personnel. This warranty does not cover normal maintenance, calibration, or regular adjustments as specified in operating and maintenance instructions of this manual, and/or labor involved in moving adjacent objects to gain access to the Equipment. This warranty does not cover consumable items such as the Platen, Release Sheets, Conveyor Belt Wraps, gaskets, O-rings, light bulbs, nor does it cover water contaminant problems such as foreign material in water lines or inside solenoid valves. It does not cover water pressure problems or failures resulting from improper/incorrect voltage supply. **This warranty does not pay travel, mileage, or any other charges for an Authorized Service Agency to reach the equipment location.**

2. Roundup reserves the right to make changes in design or add any improvements on any product. The right is always reserved to modify equipment because of factors beyond our control and government regulations. Changes to update equipment do not constitute a warranty charge.

3. If shipment is damaged in transit, the purchaser should make a claim directly upon the carrier. Careful inspection should be made of the shipment as soon as it arrives and visible damage should be noted upon the carrier's receipt. Damage should be reported to the carrier. This damage is not covered under this warranty.

4. Warranty charges do not include freight or foreign, excise, municipal or other sales or use taxes. All such freight and taxes are the responsibility of the purchaser.

5. THIS WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, EACH OF WHICH IS HEREBY EXPRESSLY DISCLAIMED. THE REMEDIES DESCRIBED ABOVE ARE EXCLUSIVE AND IN NO EVENT SHALL ROUNDUP BE LIABLE FOR SPECIAL CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR THE BREACH OR DELAY IN PERFORMANCE OF THIS WARRANTY.

A.J. Antunes & Co.
ISO 9001 CERTIFIED

180 Kehoe Blvd. • Carol Stream, Illinois 60188

Telephone (630) 784-1000 • FAX (630) 784-1650
Toll Free 1-877-392-7854 (in the U.S.A. and Canada)
www.ajantunes.com